

NASA Glenn Research Center Employee Wellness Program

SITE VISIT REPORT

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Places and Facilities Visited:	NASA Glenn Research Center/Singleton Health Services 21000 Brookpark Road, MS 341-1 Cleveland, OH 44035
Date(s) of Site Visit:	February 8-9, 2006
Staff Interviewed:	
Program Staff:	Fitness Director (vendor); Fitness Specialist (vendor); Clinical Dietician (vendor)
Management:	Contracting Officer's Technical Representative
Site documentation gathered:	"Colorful Choices" Incentive Program; Colorful Choices: Evaluation Form Summary 2005; Examination Trend Data; The Role of the Dietician in Health Promotion; Fitness Program Patient Census – December 2005; NASA Glenn Winter '06 Fitness Classes; NASA Glenn Walking Paths map; Slimathon 2005 Week 52 participant information form; Movin' and Winnin' 2004 Deposit/Withdrawal description; Movin' and Winnin' 2005 Deposit/Withdrawal description; Programs or Special Events Feedback Survey; Fitness Presentation; Movin' and Winnin' Participant Evaluation; 2005 Slimathon Participant Evaluation; Slimathon '04 Summary data; 2004-2005 Slimathon Comparison; Slimathon 2005 Summary data; Stats for Weight Before Fitness

DESCRIPTIVE SUMMARY

PURPOSE

The purpose of the SWAT project (for Swift Worksite Assessment & Translation) is to identify worksite health-promotion programs that show promise in helping employees maintain or attain healthy weight. The NASA Glenn Research Center worksite was identified as having an innovative program or practice that may qualify to serve as a benchmark for similar organizations.

WORKSITE AND COMMUNITY CONTEXT

Type of Jobs/Industry. The NASA Glenn Research Center in Cleveland, OH is located at Lewis Field, a 350-acre site, adjacent to Cleveland Hopkins International Airport. 150 buildings, including various test facilities, comprise the Center. Approximately 3,200 people staff Glenn, including 1,714 civil service employees and 1,500 support service contractors. The majority of the employees are scientists and engineers, involved in the research tasks and projects of the Center. In addition to the scientists and engineers, there are technical specialists, skilled workers, and an administrative staff.

Size and Characteristics of Workforce. There are 3,214 full- and part-time on-site employees. 1,500 of the employees are support service contractors for which workforce composition data are not available. Of the 1,714 civil servants, 78 percent are White, 70 percent are male, and the average age is 47 years. 10 percent of the civil servant population is Black or African American, 6 percent are Asian or Pacific Islander, and 1 percent is American Indian or Alaskan Native. Over half of the civil servant population is in science and engineering job fields.

Community Context. NASA Glenn is located adjacent to Cleveland Hopkins International Airport, approximately 10 miles from downtown Cleveland. The nearest restaurants, fast food chains, and grocery stores are between 2 and 5 miles away in either direction from the campus. On the Glenn campus there are walking trails, a volleyball court, a soccer field, a 1 mile track, and 2 softball diamonds. There are organized volleyball, soccer, and softball leagues; however the volleyball league is the only one run by the wellness program.

The worksite has an on-site cafeteria and on-campus buildings are equipped with vending machines, microwaves, and mini-refrigerators. However, the fitness center staff felt that the majority of employees either brought their own lunch or went off-campus because of the poor quality food in the cafeteria.

Most NASA Glenn employees drive to work. Although most employees live in Cleveland or in nearby suburbs, some commute up to 1.5 hours. There is an on-site group that encourages biking to work. Once on-campus, NASA Glenn provides bikes to employees for on-campus transportation. There are sidewalks and several walking trails which provide employees with the opportunity to walk or bike from building to building.

DESCRIPTION OF NASA GLENN RESEARCH CENTER WELLNESS PROGRAM

Program Objectives

The NASA Glenn Fitness Center, which includes all wellness programs, has 2 main program objectives. They are focused on keeping employees healthy by:

- Taking a preventative approach to health risks and empowering individuals to manage their own health,
- Providing accessible and user friendly-services through employee health programs at the worksite.

The largest worksite program, the Slimathon, has the following objectives: (1) to encourage physical activity amongst participants; (2) to encourage body fat loss or maintenance of healthy weight; and (3) to encourage team camaraderie and support.

Staffing/Location

The Fitness Center staff includes a full-time Fitness Director (1.0 FTE), two full-time Fitness Specialists (2.0 FTE) and three part time fitness instructors. Due to the joint contract funding, several Medical Center staff members also participate in the wellness program. Staff from the Medical Center include the Medical Director (0.5 FTE), who supervises the Fitness Director, and a Registered Dietician (RD) (0.2 FTE), who oversees the nutritional aspects of the program. All of the program staff are contracted by NASA from Singleton Health Services. The Fitness Director oversees the entire wellness program, which involves coordinating, developing, and evaluating all aspects of the wellness program, including conducting initial assessments of employees. She oversees staff as they conduct strength and flexibility tests and as they make referrals to the dietician and programs as needed. Along with the other Fitness Specialists, she also teaches fitness classes to members of the fitness center.

One Fitness Specialist is the program coordinator for the Slimathon program and she reports directly to the Fitness Director. For the Slimathon, the Fitness Director along with the two Fitness Specialists assist with data entry, participation tracking, and program evaluation, as well as meeting one-on-one with employees to assess their body fat composition. The Fitness Center staff and the Registered Dietician conduct seminars for employees throughout the year on fitness and nutrition related topics. The RD provides three types of nutrition services: individual nutrition counseling, health promotion programming on various nutrition topics, and group programs in conjunction with the Fitness Center. The funding for the Fitness Center is combined with the funding for an onsite Medical Center, so the staff works closely to integrate programs.

The contract funding for the Fitness Center is combined with the Medical Center funding. The Medical Director, located at the Medical Center, oversees both the Medical and Fitness Centers. The Medical Center is located in the same building as the cafeteria, which is across campus from the Fitness Center. It is a full staffed medical clinic; they provide yearly physicals with a preventative health focus, onsite vision and hearing testing, x-rays, and a fully equipped travel clinic.

Program Practices and Components

The employee wellness program at the NASA Glenn Fitness Center encompasses a number of programs, activities, and incentives. The Fitness Center is funded as part of a 1.5 million dollar contract that also funds the Medical Center at NASA Glenn. The employee wellness program is one component of the activities run by the Fitness Center staff. This report focuses on the wellness component of the Fitness Center, which are primarily the Slimathon and Movin' and Winnin' programs. The following describes the Fitness Center employee wellness program components that relate to promoting healthy weight.

Slimathon Weight Management Incentive Program. This program is an incentive-based program and each participant is required to pay \$15 to participate, but does not need to be a member of the Fitness Center. Friends, family members, and retirees are allowed to participate, however, only NASA Glenn employees are allowed to use Fitness Center equipment. The program starts each January. Staff encourages participants to incorporate their family and friends in their weight loss goals because they believe that their support is an important factor contributing to success. The first 12-weeks of the program involve a team competition where teams of 4-10 employees compete against each other to see who can gain the most points through completing aerobic and resistance training exercise. Each participant self-reports their exercise to a team captain weekly. Points are obtained by completing the required amount of exercise and reporting exercise to the team captain on time. In previous years, points were offered for attending health talks, however, in 2005, additional points for attending health sessions were no longer given. The participants are now required to achieve 30 minutes of aerobic exercise or resistance training 5 days/week. Bonus points are offered for teams that get 90 percent of the required exercise or when each member is at or below the initial body fat percentage.

All participants are required to have an initial and final body fat assessment conducted by the Fitness Center staff. These assessments and results consultation last approximately 20 minutes and include skin fold measurements at 5 or 6 sites or girth measurements depending on the subject's body type. Every 6 weeks throughout the year there is an optional body fat assessment. After the 12-week team portion concludes, the participants have the option of continuing with an additional team competition created by the Fitness Center staff or continue on an individual basis with exercise. If they choose to continue with the team competition, teams are invited to register for the Health Challenge which is very similar to the Slimathon, but includes fun team challenges which are educational or physical in nature (i.e. logging dietary intake, participating in a walk, etc.). At weeks 30 and 52, another body fat assessment is conducted, at which time participants have the chance to win an incentive prize for being at or below their initial body fat percentage. Each year participants have the opportunity to continue with the next year's program. In the event that the participant continues, their week 52 assessment is used as their initial assessment for the new program. Combining the week 52 assessment with the upcoming year's initial assessment helps eliminate the opportunity to "bulk" up for the new program, which staff found to be a problem in the past.

The week 12 incentive is \$20 and is awarded to the members of the top teams as well as the top male and female individuals at an awards picnic. In the event of a tie, the winner is determined by the team with the greatest change in percent body fat. At week 30, participants who maintain or lose body fat percent are given a Fitness Center tee shirt and at week 52, participants are given a \$20 gift certificate to Dick's Sporting Goods.

Annual Glenn Research Center Health Challenge. This program is designed to provide additional incentive for Slimathon participants to remain in the program until week 30 as well as to encourage new participants. The Health Challenge provides the opportunity for participants to join a team or stay in their Slimathon team. The Fitness Center staff has developed competitive activities to get participants outside and exercising. Health Challenge activities include a 1 mile time predicted walk/jog and a bocce ball tournament, nutrition logging using www.fitday.com, 1.4 mile walk for National Employee Health and Fitness Day, and a push up/crunch challenge.

The 1 mile predicted walk/jog is intended to get participants to practice prior to the competition in order to accurately predict their completion time.

Exercise Across America. Exercise Across America is nationally developed exercise incentive program, where any employee, friend, family member, or retiree can participate. In this program, a certain number of minutes are equal to a mile and participants have to earn enough miles to make it across the US. The minutes per mile ratio is based on how active the participant was at the start of the program; more active individuals have to exercise for more minutes to complete a mile than less active individuals. However, as low-active individuals become more active their minutes per mile ratio increase. Exercise is self-reported and participation is free for everyone.

Pentathlon. Although most programs offered through the Fitness Center are independent of a membership, programs involving Fitness Center equipment are only offered to Fitness Center members. Therefore, participation in the Pentathlon is limited to members only; however, Fitness Center membership is free to all employees. The Pentathlon is comprised of five activities, which are monitored by the Fitness Center staff. They include jogging, rowing, bench presses, leg extensions, and pull-ups. Participants were separated into age groups. A minimal fee was required to participate and all proceeds were donated to an organization such as the American Diabetes Association. In 2005, this program was modified to allow participants to pick 6 activities from a list of 11 and became the Pick 6 Challenge.

Health/Nutrition Seminars. The Medical Center and the Fitness Center offer health education seminars that employees can attend using their flex time. The topics of the seminars are based on employee requests found in the survey results. This past year included seminars about label reading, healthy eating, and a review of the new USDA nutrition guidelines. This year, the registered dietician plans to offer a jumpstart talk and a panel discussion.

Nutrition Counseling. The Registered Dietician at NASA Glenn offers one-on-one counseling to all employees. Although the counseling is offered to all employees, civil servants are not required to pay a fee, while contractors are required to pay \$25 per visit. Individuals set their own nutrition goals. The Registered Dietician sees individuals anywhere from weekly to one time only. Patients are weighed each time they come in and counseling involves nutrition advice, physical activity, and behavior change. The dietician maintains examination trend data for all patients. Referrals to the dietician are made by the employees themselves, from private physicians, from the Occupational Medicine Clinical staff, or from the NASA Glenn Fitness Center staff.

Colorful Choices Fruits and Vegetables. Participants pay a \$5 registration fee to join the program and spouses/partners/friends are allowed to participate. The purpose of Colorful Choices is to get participants to eat five servings of fruit and vegetables every day. Each participant self-reports their fruit and vegetable intake on a tracking sheet provided by the dietician for 20 days and then submits the tracking sheet to the dietician. During the program, participants are sent emails with additional information, recipes, and games. All participants that meet 90 percent of the goal (90 servings of fruits and vegetables in 20 days) receive a prize. All participants who submit their tally sheet are placed in a drawing for the grand prize. Individual

awards are given to the male and female with the highest number of servings of fruits and vegetables over the 20-day period.

LEARN. The Registered Dietician (RD) at NASA Glenn leads a 12 week LEARN program. The components are Lifestyle, Exercise, Attitudes, Relationships and Nutrition. Behavior Modification, Exercise and Nutrition topics are covered at each weekly session. Registered Dietitian measures participants' weight weekly. Participants also report their weekly exercise and keep a daily food diary which is reviewed by the RD.

Annual Step out/1.4 Mile Walk. NASA Glenn sponsored an employee fitness day, where employees completed a 1.4 mile walk. Nurses from the Medical Center completed blood pressure screenings and the registered dietitian provided fruit and water to participants as well as information and signs promoting healthy behavior.

Movin' and Winnin'. Similar to the Slimathon program, Movin' and Winnin' requires participants to choose a weight goal. Like Slimathon, it is a team program for the initial 12 weeks. The top teams and top individual male and female participants received prizes. At week 30, all participants that were at or below their weight goal received a T-shirt. At 52 weeks, all those at or below their weight goal received a gift card. Participants' names were also put into a drawing for \$20 if they came to the week 30 and 52 body composition testing, but the program staff sometimes forgets to do the drawing.

Lunchtime Volleyball Leagues. The NASA Glenn Fitness Center coordinates and referees two lunchtime volleyball leagues, one in the summer and one in the fall. The summer league lasts for 8 weeks and each team play 18 games. At the end, there is a 2 week single elimination tournament. The fall league plays over a 12 week period. During the fall league, each team plays each other at least one time and then there is a tournament at the end to determine the champion.

Weight Before Fitness. The Fitness Center offers a holiday incentive program where participants are weighed in at the start of the program and then again at the end. The goal of the program was to have each participant exercise at least 30 minutes a day and stay active through the holiday season. The participants tracked their exercise on a log form that was given to them at the start of the program. Throughout the program there were short games, such as a word search, crossword puzzle, and word scramble. There was a prize drawing held for those individuals that turned in the games. Each week a motivational email with a healthy recipe was sent to each participant. The participants weighed in at the start and the end of the program. The program was 4 weeks long. A cookbook and pedometers were used as incentives.

Educational Presentations. Fitness Center staff provided 7 educational presentations in 2005: (1) *Proper Lifting Techniques* for LTID-Imaging Technology Center Employees; (2) *Stress Management* for members of the Business and Professional Women's Group talk; (3) an exercise related talk; (4) Automated External Defibrillator (AED) awareness; (5) *How to Exercise on the Run* for the Women's Advisory Group; (6) an exercise related presentation for the Dietitian's Weight Management Program (LEARN class); and (7) *Healthy Back Presentation and Follow-Up Exercise Training* for an office within the Computer Services Division.

NASA Glenn Fitness Center. NASA Glenn offers an onsite Fitness Center free to all employees. The Fitness Center is located in a newer facility (opened 6/14/04). The Fitness Center is open from 6AM until 7PM on Monday through Friday. To use the equipment, employees must sign up for a membership. Unless employees are clearly familiar with the equipment, Fitness Center staff provides an orientation before allowing employees to use the equipment. The equipment includes treadmills, bikes, rowing machines, stepper machines, elliptical machines, strength equipment, and free weights. There are TVs in the workout area, but they only receive CNN or the NASA channel. Employees are able to plug headphones into the equipment to tune their personal FM radio to hear the audio on the TVs. There are also men's and women's locker rooms with showers, scales, and a sauna.

Fitness Center members are able to register for free fitness classes. Classes are held throughout the week at the Fitness Center including classes on muscle conditioning, cardio kickboxing, yoga, healthy back, step aerobics, total body toning, step and tone, and Pilates. A Mat Pilates class and a Boot Camp Class are also available to members, but at an additional fee (Pilates \$50-\$60, Boot Camp \$80). All of the classes are taught by Fitness Center employees and are held between 6:15AM and 5:45PM Monday through Friday. The Fitness Center averages between 20 and 23 classes per week.

Environmental support. The worksite physical environment is fairly encouraging for physical activity among employees. There are bulletin boards in the Fitness Center with posters promoting the fitness classes offered and a bulletin board in the Cafeteria with one nutritional poster. Outside, there are six walking/biking trails around the main campus totaling 7.86 miles. We were told that employees use these paths; however, on the day of our site visit, the snowy, frigid weather generally did not lend itself to outdoor physical activity, so we did not observe this. In addition, NASA Glenn provides bikes at several buildings on campus for employees to use when running errands around campus. This is independent of the Fitness Center. There is also a 1 mile track, two softball diamonds, a soccer field, and a volleyball court located next to the Fitness Center.

The Fitness Director and the Registered Dietician noted problems with the options provided in the drink vending machines in both the Fitness Center and the Cafeteria. Although both machines provide fruit juice, it was not 100 percent fruit juice. The drink machine in the cafeteria offers only one option for fruit juice, bottled water, and diet soft drink. The rest of the drinks offered were non-diet soft drinks. The cafeteria and the vending machines are controlled by a different vendor leaving the Fitness Director and the Registered Dietician with little control over food and drink options. However, the buildings on NASA Glenn's campus are equipped with refrigerators and microwaves, enabling people to bring food from home as an alternative. The cafeteria had some healthy options, but the dietician felt there was much room for improvement. There is a salad bar; however the lettuce and other vegetables did not appear very fresh. There is a poster advertising nutrition information for the salad bar. The cafeteria offers some fresh fruit, but no low fat milk or yogurt. During the annual audits, the Fitness Center staff and the dietician note the need for healthy options in the cafeterias and vending machines.

INNOVATIVE PRACTICES

NASA Glenn believes their program is particularly innovative in three respects: (1) opening program activities to retirees and employee's friends and families; (2) year long opportunities to keep a fresh perspective; and (3) one-on-one guidance and counseling provided to all participants regardless of fitness club membership.

Opening program activities to retirees and employee's friends and families. The Fitness Center staff believes that it is essential for participants to have the support of friends and family when working towards their weight loss goals. This type of support helps motivate participants and creates an environment to foster a healthy lifestyle outside of the workplace. Although non-Fitness Center members cannot use their equipment, many of the fitness center services (e.g., Slimathon and measuring of body fat composition) are open to all employees and their friends and family members.

Year long opportunities to keep a fresh perspective. The NASA Glenn Fitness Center staff believes that different activities offered through the Slimathon provide employees with a variety of opportunities throughout the year to be physically active. Offering these activities continuously throughout the year also remind employees about the on-site Fitness Center and keep physical activity and healthy living on their minds.

One-on-one guidance and counseling provided to all participants. During the body composition testing for the Slimathon program, each participant meets one-on-one with staff to choose a long and short term body fat goal. Staff describes the resources available to participants and encourages their utilization of resources. There is also the option for individual nutrition counseling with a Registered Dietician.

REACH AND PARTICIPATION

The NASA Glenn wellness program, which is run through the Fitness Center, aims to reach all employees. The staff does not track overall participation in the wellness program; rather they track participation for each individual activity and general Fitness Center memberships. Family and friends are allowed to participate in most components promoting healthy weight, except using Fitness Center equipment and individual nutrition counseling.

NASA Glenn does not have a specific target audience and the Fitness Director felt that it is important to "keep the healthy people healthy," so they do not target high risk individuals. NASA promotes the theme "One NASA," so the Fitness Center staff does not collect data on the job type of participants; however, they do differentiate between civil servants, contractors, family/friend, or retiree. The program does reach more females than males, even though the NASA population is 70 percent male. The Fitness Center uses the "Today at Glenn" newsletter, which is distributed to all employees via email to announce upcoming programs and activities. Both the Fitness Center staff and the Dietician use email and posters to inform employees about activities and health related information. The Medical Center also refers patients to the Fitness Center when applicable.

One of the Fitness Specialists developed a tracking database that contains all information from the Fitness Center and participation in various wellness activities. NASA Glenn has participation data for most aspects of the Fitness Center Activities; however, data are not broken down by department or type of worker. Also, class participation does not identify repeat participants. Data on participation in various components of the Wellness Program include:

- 3.5 percent of the civil servant population (61 individuals) participated in the 2005 Slimathon program and 4 percent of the contractor population (60 individuals) participated. 10 spouses or family members and 3 retirees participated.
- 12 percent (378) of the employees (contractor and civil servants) are currently members at the NASA Glenn Research Fitness Center.
- 132 employees attended the 7 educational presentations in 2005. This number does not reflect those employees who attended more than one presentation.
- 235 employees participated in the annual step out/1 mile walk, which was a 68 percent increase over 2004.
- There were 13 teams with an average of 5 players (65 participants) listed on their rosters for the summer lunch-time volleyball league and 12 teams averaging 5 players (60 participants) for the fall league.
- 104 employees completed the initial weigh-in for *Weight Before Fitness Holiday Program* and 72 participants (69%) completed the final weigh-in.
- The Registered Dietician met with 183 new patients and had 308 follow-up visits for individual counseling in 2005.
- 248 employees participated in wellness/nutritional programs, including the LEARN program in 2005.

EVIDENCE FOR PROGRAM EFFECTS

Individual Level Outcomes

Data analysis by program staff has been limited. As reported by the Fitness Center Staff, data available on the NASA Glenn Employee Wellness Program includes the following:

Effects on physical activity. Self-reported activity levels are measured for individuals who participated in the Slimathon program. During the initial assessment, which can be combined with the week 52 assessment, participants are asked how much they have exercised in the past 3 months. During week 12 and week 30, participants report whether they completed their physical activity requirements. However, this data has not been systematically analyzed.

Effects on food/beverage consumption. Self-reported fruit and vegetable and fat intake are measured via the *Colorful Choices Fruits and Vegetables* program. However, this data has not been systematically analyzed.

Effects of maintenance of healthy weight. Between 4 and 5 percent of employees participated in the Slimathon program in 2004 and in 2005. For those employees, body weight and percent body fat are both measured as part of the Slimathon. Table 1 shows a summary of Slimathon participants' body fat during each assessment of 2004 and 2005. A similar pattern was observed in both 2004 and in 2005. For instance, by week 12 of the Slimathon, a large majority of participants who were measured (75.2% of participants in the 2004 Slimathon and 61.2% of participants in the 2005 Slimathon) had a decrease in percent body fat and only relatively small proportion of participants who were measured (2.8% of participants in the 2004 Slimathon and 14.2% the 2005 Slimathon) had an increase in percent body fat. By week 30, more than 70 percent of continuing participants (72.0% in 2004 and 72.5% in 2005) had a decrease in percent body fat from their initial assessment.

Somewhat less than half of the initial participants continued to participate in the Slimathon program through the entire year. Of those participants, about half of the continuing participants (50.8% in 2004 and 46.9% in 2005) had a decrease in percent body fat over the course of the year. Conversely by week 52, a fair proportion of continuing participants (27.1% in 2004 and 43.3% in 2005) had a higher percent body fat.

Table 1. Summary of Slimathon Participants Body Fat Percent at NASA Glenn Research Center by weeks 12, 30, and 52 for 2004-2005

Retention:	2004			2005		
	Week 12	Week 30	Week 52	Week 12	Week 30	Week 52
	N = 136	N = 50	N = 59	N = 121	N = 62	N = 66
	93.8%	34.5%	40.7%	90.0%	46.0%	49.0%
Body Fat Status.^{a,b}						
At lower body fat percentage	109 75.2%	36 72.0%	30 50.8%	82 61.2%	45 72.5%	31 46.9%
At same body fat percentage	23 15.9%	5 10.0%	13 22.0%	17 12.7%	12 19.6%	9 13.6%
At higher body fat percentage	4 2.8%	9 18.0%	16 27.1%	19 14.2%	5 6.5%	26 43.3%

^a Percent body fat is measured using skinfold measurements of the chest, abdomen, tricep, iliac, subscapula, and thigh.

^b Average initial body fat percentage in 2004 for females was 32.44% and the average initial body fat percentage in 2004 for males was 22.15%.

53 of the 72 participants (74%) that completed the final weigh-in for Weight before Fitness lost weight throughout the holiday; 5 participants (7%) maintained weight, and 16 participants (22%) gained weight during the holiday. The average weight at the end of the program was 167.7 lbs versus 170.3 lbs at the start of the program – a mean loss of 2.6 lbs.

Effects on weight loss. Body weight is measured during the week 12, week 30, and week 52 of the Slimathon assessments. Body weight is also measured by the dietician during each

counseling session and body weight and height is measured by the Medical Center during the annual physicals. However, this data has not been systematically analyzed. It has only been used as a metric to show trends in behavior and other changes.

Effects on waist and/or hip girths. Circumference (in centimeters) is measured during week 12, week 30, and week 52 of the Slimathon assessments. Measurements of the abdomen 1 (natural waistline), abdomen 2 (umbilical), arm (extended bicep, palm up), forearm (greatest circumference), thigh (greatest circumference), and hip (greatest circumference) are taken. This data has not been systematically analyzed.

Effects on skinfolds. Skinfold measurements of the chest, abdomen, tricep, iliac, subscapula, and thigh are taken during 12, week 30, and week 52 assessments. However, this data has not been systematically analyzed.

Effects on biometrics. Serum Glucose, Hemoglobin A1c, total Cholesterol, Chol/HDL ratio, HD Lipoprotein, LD Lipoprotein, and Triglycerides are measured annually by the Medical Center during yearly physicals. Employees who participate in regular individual counseling with the Registered Dietician have their lab values measured quarterly. However, this data has not been systematically analyzed.

Other health effects. Lifestyle change is measured annually through the Movin' and Winnin' Participant Evaluation survey and the Slimathon Participation Evaluation survey. The Movin' and Winnin' survey asks the following open-ended question: "Has the program changed your life in regards to exercise and nutrition?" Eleven employees responded to the question; seven noted that they had made some sort of lifestyle change (e.g., exercise more, felt more motivated, etc); three employees did not feel that it changed their lifestyle; and one employee felt that it only increased motivation in January, but the effect did not last throughout the year. The Slimathon measures lifestyle change by asking, "Has the Slimathon program changed your lifestyle in regards to exercise and nutrition? Be Specific." 80 percent of employees responded "yes" and 18 percent responded "no."

Organizational Level Outcomes

Resources and Operating Costs. The NASA Glenn Fitness Center and Medical Center are funded through a 1.5 million dollar overall employee occupational health contract with Singleton Health Services. Since the contract funds the entire Fitness Center and Medical Center, it covers substantially more than just the employee wellness program. These costs average approximately \$500 per employee per year. The wellness program is just a component of the Fitness Center and therefore only a small portion of the contract money is used to fund wellness program activities. Program staff does not have a line item budget detailing the portion of the total contract dedicated solely to the Fitness Center or the amount dedicated to the employee wellness program. The main program activities, Slimathon and Movin' and Winnin', are largely sustained through participant fees and therefore, require no money to operate aside from the cost of staff time. The money from the contract that is committed to the Fitness Center covers the Fitness Center employees' salaries and office materials such as paper and computers.

Each employee pays \$15 to participate in Slimathon and Movin' and Winnin' programs. All fees go toward prizes and the awards picnic. A breakdown of the Movin' and Winnin' program costs can be found in Table 2.

Table 2. Expense Descriptions for NASA Glenn Research *Movin' and Winnin'* Program for 2005

<u>Expense Description</u>	<u>Amount</u>
<i>Participant fees^a</i>	\$2,773.28
Take the Wellness Road book	\$400.00
Shipping for books	\$28.00
Books for presentation raffle	\$64.95
Cash Prizes	\$560.00
Picnic supplies	\$323.57
T-shirts	\$536.50
AUG Weigh-in incentive	-
1 year gifts	\$760.00
Step out incentive	\$20.00
Total money spent in 2005	\$2,693.02
Total Remaining from Participant Fees (to be added to 2006 money)	\$80.26

^a Includes \$318.28 of participant fees leftover from 2002, 2003, and 2004.

Cost Effectiveness and Other Benefits. NASA Glenn Fitness Center does not collect data on productivity, medical expenditures, employee turnover, or absenteeism. Anecdotally, the program staff believe there have been fewer injuries on the job, so fewer workman compensation claims. Again, because the employee wellness program is a component of the overall employee occupational health contract, it is difficult to determine the actual operating cost of the program and therefore any cost effectiveness.

SUMMARY

The NASA Glenn Research Center wellness program evidenced multiple attributes indicative of a strong health promotion program – a cohesive and dedicated full-time wellness staff; year round programs to encourage weight management and physical activity; one-on-one consultations and follow-up with wellness staff; free, on-site fitness center; free, on-site fitness classes; on-site Registered Dietitian offering individual nutrition counseling; and other seasonal wellness activities and incentives. There is strong environmental support within the NASA Glenn campus, including a 1-mile track, soccer and softball fields, a volleyball court, and several walking/biking paths. The program encourages friends, spouses, and retirees to participate in several activities and the program also uses self-assessments to make program changes. A summary of the characteristics of the NASA Glenn Wellness Program are provided in Table 3.

Table 3. Summary of Employee Wellness Program Indicators at NASA Glenn

Criteria/ Indicator	NASA Glenn
INNOVATION	
Individualized assessments	Employees who participate in the Slimathon Weight Management Incentive program meet one-on-one with Fitness Center staff to measure skinfolds, circumference, body weight, percent body fat, and body weight or percent body fat goals.
	Civil servant employees have the option to participate in free individual counseling with the Registered Dietician. Contractors can participate in the individual counseling for \$25 a session.
Improved access	Civil Servants are encouraged to use their flex time to participate in wellness activities, including attending nutrition or physical activity education seminars, fitness classes, and/or using the Fitness Center equipment for Fitness Center members.
	The Fitness Center provided 7 educational presentations and the dietician provided 5 nutritional presentations.
	Free on-site Fitness Center for all employees.
	All employees are encouraged to participate in the Annual Step Out/1 Mile Walk, where on-site screenings, fruit, water, and nutritional information are available.
Incentives	Employees who participate in the Slimathon program or the Movin' and Winnin' program and are at or below their initial body fat percentage receive prizes (e.g., cash, gift cards, and t-shirts).
	Employees who attended the Annual Step Out/1 Mile Walk had their names entered into a drawing for \$20.
Integrated Medical Center and Fitness Center	Both the Medical Center and the Fitness Center make referrals to one another. Fitness Center staff often makes referrals to the dietician, who is located at the Medical Center.
	Funding for the Fitness Center and the medical Center comes out of the same \$1.5 million contract.
	Both Medical Center employees and Fitness Center employees participate in the Annual Step Out/1 Mile Walk.
	The Fitness Center Director reports to the Medical Center Director who is kept apprised of Fitness Center activities.
Financial support	The Fitness Center and the Medical Center share a \$1.5 million a year contract.
Senior level support	The previous Medical Center Director was very involved in the wellness program. He attended presentations by Fitness Center staff and encourage employees to use their flex time to attend. He also had a team in the Slimathon program. A new Medical Center Director was appointed on January 1, 2006. The Fitness Center staff is optimistic that the new Medical Center Director will continue to be supportive and involved in the wellness program.
Environmental support	There are several walking trails within NASA Glenn's campus, as well as a one mile track, two softball diamonds, a soccer field, and a volleyball court.
	Microwaves and refrigerators are located in the buildings on NASA Glenn's campus.
On-site wellness staff	The Fitness Center is staffed by 1 full-time Fitness Director, 2 full-time Fitness Specialists, and 3 additional fitness instructors.
	One Registered Dietician at 50% time located at the Medical Center.
	Fully staffed and equipped Medical Center on-site.
REACH -- PROGRAM PARTICIPATION AND COMPLETION	
Reach	4% of the NASA Glenn employees participate in Slimathon, the main activity of the wellness program.

Criteria/ Indicator	NASA Glenn
	10 spouses or family members and 3 retirees participate.
Reach to range of employees	Participation in Slimathon program is almost equal between civil servants and contractors. 3.5% of the civil servant population (61 individuals) participated in the 2005 Slimathon program and 4% of the contractor population (60 individuals) participated.
	134 employees (4%) signed up to participate in the Slimathon program
	235 employees (7%) participated in the annual step out/1 mile walk
	The Registered Dietician met with 183 new patients and 308 follow-up patients for individual counseling in 2005 (for a combined participation of 13%)
Fitness Center Reach	12% (378) of the employees are currently members at the NASA Glenn Research Fitness Center.
Completion of program: Slimathon	49% of participants completed the week 52 Slimathon assessment in 2005
Completion of program: Nutritional programs/ LEARN	248 employees (7%) participated in nutritional programs, including the LEARN program in 2005.
EFFECTS ON WEIGHT	
Weight loss	<i>SWAT Criterion: an average weight loss of 4 pounds over a one-year period</i> Body weight is measured during the Slimathon assessments, the Weight Before Fitness weigh-ins, and during individual counseling sessions with the dietician. However, this data has not been systematically analyzed.
	Employees who participated in the Slimathon program showed improvements in body fat percentage. Over half of the employees who participated in the final assessment maintained or had a decrease in body fat percent during 2005.
Healthy weight maintenance	<i>SWAT Criterion: at least no weight gain over one year for (BMI >18.5 -- < 25.0)</i> No information.
HEALTH EFFECTS	
Physical activity	Self-reported activity levels are measured for individuals who participated in the Slimathon program. However, this data has not been systematically analyzed.
Fruit and vegetable consumption	Self-reported fruit and vegetable and fat intake are measured via the <i>Colorful Choices Fruits and Vegetables</i> program. Data has not been systematically analyzed.
Total fat intake	
Fiber	
Circumference	Circumference (in centimeters) is measured during the Slimathon assessments. Data has not been systematically analyzed.
Skinfolds	Skinfold measurements of the chest, abdomen, tricep, iliac, subscapula, and thigh are taken during Slimathon assessments. Among the participants in the Slimathon, a substantial majority (75.2% in 2004 and 61.2% in 2005) were lower in body fat after 12 weeks, and the evidence of lower fat was also observed after 30 weeks. Slightly less than half of participants continued in the Slimathon for the entire year; of these about half (50.8% in 2004 and 46.9% in 2005) had lower body fat. However, at the end of the year, a fair number of these continuing participants (27.1% in 2004 and 43.3% in 2005) were at a higher body fat percentage.
Biometrics	Serum Glucose, Hemoglobin A1c, total Cholesterol, Chol/HDL ratio, HD Lipoprotein, LD Lipoprotein, and Triglyceride are measured with blood profiles during yearly physicals and individual counseling sessions with the dietician but data have not been systematically analyzed.
Other	Changes in lifestyle are measured annually through the Slimathon Participant Evaluation and the Movin' and Winnin' Participant Evaluation, but data have

Criteria/ Indicator	NASA Glenn
	not been systematically analyzed.
SUSTAINABILITY OF EFFECTS	
Sustainability of participation	Staff collects data on repeat participation in Slimathon and Movin' and Winnin' programs, but the data has not been systematically analyzed. Anecdotally, staff believes that many employees continue to participate year after year.
Sustainability of health and weight effects	No systematic data available.
POTENTIAL DATA	
Behavior	Team members are required to submit weekly logs to team captains of physical activity levels during the first 12 weeks of Slimathon, which can provide longitudinal data trends.
	Lifestyle change data is measured in the Slimathon and Movin' and Winnin' end of year surveys, which can provide repeat cross-sectional data trends.
Weight and health	Slimathon and Movin' and Winnin' assessment data can provide longitudinal data trends on weight and body fat.
	Data gathered during yearly physicals can provide with repeat cross-sectional data trends.
	Weight Before Fitness program measures weight and can provide longitudinal data trends.
Biometrics	Data gathered from blood work done during yearly physicals and for individuals with regular nutrition counseling can provide both longitudinal and cross-sectional data trends.
Comparison groups	No comparison group used.
PROGRAM SUSTAINABILITY, PUBLIC HEALTH RELEVANCE, TRANSFERABILITY AND COST	
PROGRAM SUSTAINABILITY	
Management support	Previous Center Director was very supportive and participated in the program. Fitness Center Staff remain optimistic that the new Center Director will continue to support the program.
	Belief that wellness program has reduced workers compensation claims and is therefore saving NASA Glenn money.
Risks to sustainability	Limited risks – Singleton Health Services was awarded a new contract in 2006 that runs for 5 years.
	NASA Glenn has been experiencing severe job cuts recently (approx. 1,700 jobs cut), which has influenced employee morale.
PUBLIC HEALTH RELEVANCE	The program builds on public health model with (1) feedback on health status, (2) increased access, (3) social support, and (4) environmental change.
TRANSFERABILITY	Because the Fitness Center is closely tied with the Medical Center, the program is portable to similar settings where an onsite medical center is located.
COST AND RETURN	
Cost	The Fitness Center and the Medical Center are funded by a 1.5 million dollar a year contract. Fitness Center staff's salaries and office supplies are covered through this contract
	The Slimathon program and the Movin' and Winnin' programs are offered at no cost to NASA. Participants pay a \$15 registration fee, which covers the cost of prizes.
CONTRIBUTORS TO SUCCESS:	
PROGRAM FACTORS	
Staff	Civil servant and contracting staff dedicated to wellness program.
Management Support	Previous Center Director was very supportive and participated in the program. Fitness Center Staff remain optimistic that the new Center Director will continue to support the program.
CONTEXTUAL FACTORS	

Criteria/ Indicator	NASA Glenn
Workforce Characteristics	The 3,214 full and part-time employees are predominantly male and Caucasian. The average age of the workforce is 47 and with the current job cuts, the average age is expected to increase. Staff generally have access to, and use the Internet (the platform for the wellness program updates and reminders).
Facilities	The main campus offers good walking and biking opportunities.

Table 4. NASA Glenn Research Site Visit Contacts

Position	Staff Contact Information
Fitness Director:	Renee C. Barrett, CHES , Fitness Director NASA Glenn Research Center/Singleton Health Services 21000 Brookpark Rd., MS 341-1 Cleveland, OH 44035 Phone: 216-433-6481 Renee.C.Barrett@grc.nasa.gov
Senior Management:	Anthony Christian , Contracting Officer's Technical Representative NASA Glenn Research Center 21000 Brookpark Rd., MS 15-2 Cleveland, OH 44135 Phone: 216-433-8746 Anthony.Christian@grc.nasa.gov
Program Staff:	Nancy Fisco Miller, MS, RD, LD , Clinical Dietitian NASA Glenn/Singleton Health Services 21000 Brookpark Rd., MS 15-5 Cleveland, OH 44135 Phone: 216-433-8134 Nancy.F.Miller@grc.nasa.gov Traci D. Morris , Fitness Specialist [left NASA Glenn in 5/06] NASA Glenn/Singleton Health Services 21000 Brookpark Rd., MS 341-1 Cleveland, OH 44135 Phone: 216-433-6313 Traci.D.Morris@grc.nasa.gov

NASA Glenn Research Center Employee Wellness Program

INTERPRETIVE ASSESSMENT

Based on information collected and observations made during our site visit, we offer the following suggestions for your consideration. For a list of the program dimensions that we considered when crafting this interpretive report, please see pages 21-22. Also, attached is a 2-page overview of CDC's Healthy Worksite Initiative.

Program Goals and Components

Goals. Your program goals are clearly stated and are in line with program activities.

For your further consideration:

How long has it been since your goals were carefully reviewed? As a general practice, consider reviewing goals every few years and having a dialogue with managers, staff, and employees to ensure that the goals remain relevant to your workforce. An opportune time is prior to renewal or re-bidding with a vendor.

Components. The program appears to have strong fitness, nutrition and weight control components.

For your further consideration:

Is there a referral and follow-up system between medical and fitness/nutrition services? Having both facilities – a medical center and a fitness center – onsite provides an excellent opportunity to have the doctors/nurses directly refer employees to dietitians and fitness specialists as part of the annual medical exam and consultation. Is such a system in place? Can it be improved?

Reach and Participation. Participation in wellness activities is relatively low. For example, only 12% of employees are members of the Fitness Center, which is provided as a free service to all employees. With over 3,000 employees, it is an ongoing challenge to increase the number of employees who participate.

For your further consideration:

Your workforce is primarily comprised of middle-aged men in engineering and technical jobs. Are there particular offerings/incentives/strategies that would appeal to them? Consider conducting an employee survey to assess use of services, but also to gather input on what employees would like to see offered.

Environmental Supports. An attractive feature of the NASA Glenn Research Center campus is that it is conducive to outdoor physical activity during pleasant weather with its on-campus walking/biking paths, track, softball diamonds, soccer field, and volleyball court. However, on

the nutrition side, it appears that food choices in the cafeteria and vending machines could be improved.

For your further consideration:

Consider making a sustained effort to increase the variety of healthy food and beverage choices in the workplace. For example, one worksite negotiated a short-term trial period with their vendor to substitute healthier items with a promise to subsidize any lost revenue. See the healthy food and beverage standards in vending machines provided by the California Department of Health Services <http://www.dhs.ca.gov/ps/cdic/CPNS/worksite>). Another worksite improved cafeteria choices through resolute negotiation when the contract was up for renewal.

Policy Supports. Policies that support a healthy worksite are a means to impact the entire workforce and organization.

For your further consideration:

Consider a healthy food-at-meetings policy. Some companies have found it beneficial to establish a policy requiring that when food is provided during meetings, healthy options are always available. (See attached CDC document.)

Is it feasible for some employees to walk or bicycle to work? Are there policies in place to support such commuting (e.g., special incentives or recognition)?

Community Supports. The Fitness Center staff is involved with selected community events and outreach.

For your further consideration:

Consider ways to better link employees (and spouses/families) to wellness activities in their own communities. For example, displaying and distributing materials (e.g., directories, maps, event brochures) on neighborhood resources and events – such as local Ys, health clubs, parks, walking/bicycling trails – would reinforce positive health behaviors during leisure time.

Program Tracking and Evaluation

Key Measurements. From a healthy weight perspective, it's notable that percent body fat is measured periodically for those who wish to have it done.

For your further consideration:

To estimate healthy weight, recommended practice is to measure height (at least initially) and weight and to calculate BMI (www.cdc.gov/nccdphp/dnpa/bmi). It was unclear when weight was self-reported and when it was actually measured in the weight control

programs. Consider meeting with your medical center staff and agree to follow the same procedures (e.g., measure weight on a calibrated scale) and to use the same BMI standards. Measuring selected skinfolds and/or girths can be useful as additional measurements.

Data Analysis and Use. Participation for each individual activity and Fitness Center memberships are tracked.

For your further consideration:

The focus of your staff and resources are on providing services, as they should be. However, to gain insight on the impact your services are having it is necessary to systematically collect and analyze key measures to indicate progress toward stated goals. Summary data should be shared with participants, discussed among staff, and reviewed with management. Findings can then be used to make informed decisions regarding adjustments to current services or launching new initiatives.

Summary Comment

We commend you for your commitment to working toward a healthier workplace and enabling employees to make and sustain healthier behaviors. We encourage you to further develop and refine the excellent services and facilities you currently have. You have an excellent foundation from which to build. We wish you much success.

Appendix A. SWAT Interpretive Assessment Checklist

A. Program Goals and Components

1. Goals

- a. Program design is clearly articulated
- b. Program activities are logically related to goals
- c. Participants understand the goals of the program.
- d. Management and program staff share same goals

2. Components

- a. Types of interventions offered are tailored to workforce(s)
- b. Both nutrition and physical activity components offered
- c. Program provides feedback on participant progress
- d. Program offers reinforcement to employees –
use of incentives, encouragement by staff, social support
- e. Interventions appear acceptable/appealing to employees
- f. Effective coordination with medical services

3. Reach and Participation

- a. All employees are eligible for program
- b. Participation rates are similar for men and women, among different
cultural groups, by all levels and types of employees
- c. Eligibility and participation by spouses and family members
- d. Participation rates are meeting program's goal
- e. Definition of participation is satisfactory

4. Policy Supports: refers to organizational policies that support “culture of wellness,” for example...

- a. No smoking policies
- b. Healthy food at meetings
- c. Release time to exercise
- d. Health care incentives

5. Environmental Supports: such as...

- a. Exercise/fitness areas, locker rooms
- b. Stairwells or other building design features to promote exercise
- c. Outside walking/cycling paths, bike racks
- d. Break rooms/refrigerators/microwaves
- e. Vending machines/cafeteria
- f. Signage, posted newsletters, email messages

6. Community Supports

- a. Strong health promoting organization-community partnerships
- b. Community environmental support (e.g., bike/walking trails, parks)
- c. Community-based medical/health events/initiatives

- d. Public education/social marketing efforts
- e. State health department support/resources

7. Sustainability

- a. Management support is evident
- b. Program has an active wellness planning/advisory committee
- c. Health promotion integrated throughout corporate culture
- d. Program costs likely to provide return on investment

B. Program Tracking and Evaluation

1. Program Delivery

- a. Tracking of interventions
- b. Tracking of employees – participation and intensity
- c. Tracking of program costs

2. Key Measurements: Specific measures are keyed to specific program elements, tactics, or strategies

- a. Health risk appraisal (HRA)
- b. Biomedical – measured wt, ht, waist girth, blood pressure, cholesterol
- c. Behavioral – diet, physical activity
- d. Subjective – participants’ satisfaction, engagement
- e. Fiscal – costs for facilities, staff, incentives
- f. Other measurements on specific changes or effects of strategies (e.g., change in vending machine options, new pedometer program)

3. Data Collection Process

- a. Data are stored and managed with easy-to-use database technology
- b. Staff are skilled in data management and retrieval
- c. Individual data are collected systematically
- d. Data are collected at meaningful intervals
- e. Entry allows for reporting both cross-sectionally and longitudinally
- f. Entry allows for reporting by category (e.g., gender, age, job category)
- g. Program staff review reports on regular basis

4. Data Analysis and Use

- a. Timely feedback and follow-up are given to participants
- b. Individual-level data are aggregated and analyzed in multiple ways
- c. Data are used for making time-sensitive adjustments
- d. Program costs are estimated for return on investment
- e. Evaluation data are shared with staff, advisory committee, management
- f. Evaluation data are used for planning relative to program goals
- g. Findings and updates are shared company wide